**SDA: 7.3 CW #2 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. In a bag there are 8 red chips and 12 white chips. You are going to randomly draw out 2 chips without replacing them.
   1. Draw the tree diagram. Label all probabilities clearly on the diagram.
   2. Use this diagram to help answer the following questions:
   3. What is the probability that you get at least one red?
   4. What is the probability that you get a red and white chip (only picking 1 chip)?
   5. What is the probability that you get a red then a white chip?
   6. What is the probability of getting a red chip given you already have a white one?
   7. What is the probability you got a white chip first given your second draw was a red chip?
   8. What is the probability that if you took out three chips that you would get 2 red and then 1 white?
2. Given a standard deck of playing cards. Find the probability of each situation.
   1. You pick a heart or a spade
   2. You pick a diamond or a king
   3. You pick a face card or a heart
   4. You deal out 4 hearts in a row
   5. You deal a jack and then a queen
   6. You pick an 8 and a 10 (one card)
3. A college newsletter reports the following: 70% of incoming freshman attended public high schools. Of those who attended public high schools, 75% eventually graduate college. Of those who attended other high schools, 90% eventually graduate college.
4. Create the tree diagram
5. What is the probability that someone attends public school **and** graduates?
6. What is the probability that a student graduates from college?
7. What is the probability that a student is from a public school **given that** they didn’t graduate?
8. We meet a student that DID graduate college. What is the probability that they did **not** go to public school?
9. From State Police records we find that 78% of suspect drivers get a breath test, 36% a blood test, and 22% get both tests. Use: BR = Breath Test; BL = Blood Test
   1. Create a Venn Diagram (at right)

BL

BR

* 1. What is the probability that a random selected suspect driver
     1. gets a breath test **and** not a blood test.
     2. gets neither test.
     3. gets a blood test **or** no breath test
     4. **that got a breath test**, gets a blood test
     5. **that got a breath test**, doesn’t get a blood test.
  2. Are getting a breath test and a blood test independent? Provide statistical proof.